

**Amendments to the Drawings:**

The attached sheet of drawings includes Figures 1 – 7, and 9, which replace the original sheets including these Figures.

Attachment: Replacement Sheets  
Annotated Sheets Showing Changes

**REMARKS/ARGUMENTS**

In an Office Action dated 21 April 2005, the Examiner objected to the color drawings submitted with the originally filed application. The Examiner rejected Claims 11, 12, 16, and 17 under 35 U.S.C. 102(b) as being anticipated by Heap. In addition, the Examiner rejected Claims 13 and 14 under 35 U.S.C. 103(a) as being unpatentable over Heap in view of Bruce; Claim 15 under 35 U.S.C. 103(a) as being unpatentable over Heap in view of Gunnell; Claims 1 – 6, and 10 under 35 U.S.C. 103(a) as being unpatentable over Heap in view of Beckerer, Jr.; Claims 7 and 8 under 35 U.S.C. 103(a) as being unpatentable over Heap in view of Beckerer, Jr. as applied to Claim 1 above, and further in view of Bruce; and Claim 9 under 35 U.S.C. 103(a) as being unpatentable over Heap in view of Beckerer, Jr. as applied to Claim 1 above, and further in view of Gunnell. Applicant wishes to express its gratitude to the Examiner for the allowance of Claims 18 – 22. Regarding Claims 1 – 17, Applicant has carefully reviewed the Examiner's rejections and comments as found in the Office Action dated 21 April 2005 and provides the following remarks regarding the office action.

***Claim Rejection - Drawings***

With respect to this objection, the Examiner notes:

Color photographs and color drawings are not accepted unless a petition filed under 35 CFR 1.84(a)(2) is granted. Any such petition must be accompanied by the appropriate fee set forth in 37 CFR 1.17(h), three sets of color drawings or color photographs, as appropriate, and, unless already present, an amendment to include the following language as the first paragraph of the brief description of the drawings section of the specification:....

The Applicant submits substitute Figures 1 – 7, and 9 in line drawing format, thus it is believed that these substitute Figures meet the necessary standards.

***Claim Rejections – 35 USC §102(b)***

The Examiner rejected Claims 11, 12, 16, and 17 under 35 U.S.C. 102(b) as being anticipated by Heap. This rejection is respectfully traversed. With respect to this rejection, the Examiner notes:

Heap shows a hand grip attached to an oar shaft having other than a circular profile. Such a shape would inherently provide an interlocking as claimed.

The Applicant respectfully disagrees with the Examiner's anticipation rejection. In addition to a paddle blade, Applicant's application discloses and claims a paddle and system that includes a shaft 130 having a surface profile 135 that may lock the grip 140 into position, for example, along the shaft axis in a longitudinal direction and/or latitudinal (e.g., arcuate) direction. (Pg. 5, Lns. 3 – 4) Further, the internal surface 145 of the grip 140 (see, for example, FIG. 9) may be configured to lock into position at the corresponding location on the shaft. Additionally, the shaft may also include one of (i) a groove, (e.g., slot) and (ii) a projection (e.g., lug), and the grip may include the other one of (i) the groove and (ii) the projection to engage the one of (i) the groove and (ii) the projection of the shaft to secure the grip to the shaft. (Pg. 5, Lns. 13 – 23) This interlocking feature provides a mechanical lock in both the concentric (latitudinal) and longitudinal direction.

Conversely, Heap does not expressly or inherently disclose, teach, or hint at each and every element of the claimed invention of independent Claim 11, arranged as in the claim. A rigorous reading of Heap reveals that it contains absolutely no disclosure or teachings whatsoever that, "...the shaft includes a surface profile, and the grip includes a complimentary surface profile to engage the surface profile of the shaft to removably interlock the grip to the shaft in a predetermined orientation and position." (Cl. 11, Lns. 2 – 4) Heap teaches a, "...suitable means for securing the right hand grip element 14 and the left hand grip element 12 to the elongate shaft 16 include adhesive, double-backed tape, or the like. (Col. 5, Lns. 15 – 18) The Examiner has stated that, "[s]uch shape would inherently provide an interlocking as claimed." The interface between the grip elements 12 and 14 and the shaft 16 is smooth for accepting an adhesive as disclosed. (Fig. 1A) Moreover, this interface does not depict or disclose any surface profiles as disclosed in Applicant's application and specifically found in Claim 11.

Heap does not contain any enabling disclosure regarding the interlocking feature found in Claim 11, particularly the interlocking surface profiles, thus it does not teach each and every element of Claim 11 of Applicant's application and a *prima facie* case of anticipation has not been established. It is therefore believed that Claim 11 is

allowable. Claims 12, 16, and 17 include all the limitations of Claim 11, therefore, they are also allowable because they are dependent upon allowable Claim 11.

***Claim Rejections – 35 USC §103(a)***

Claims 13 and 14 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Heap in view of Bruce. This rejection is respectfully traversed. With respect to this rejection, the Examiner notes:

Heap teaches bent portions, but fails to disclose the degree of the bends.

Bruce teaches a bent shaft.

It would have been obvious to one of ordinary skill in the art at the time of invention to provide bent shaft portions to Heap as taught by Bruce.

Such a combination would have been desirable at the time the invention was made so as to provide a more ergonomic shape.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. (MPEP 2142)

The Applicant respectfully disagrees with the Examiner's obviousness rejection. Specifically, Claims 13 and 14 are dependent upon Claim 11 and include all the limitations of Claim 11. As argued above, Heap does not teach each and every element in independent Claim 11. Furthermore, Bruce is a design patent that teaches an ornamental design for a paddle that includes a bent shaft but little else. In particular, a careful review of Figures 1 – 5 of Bruce provides no teachings at all regarding the interlocking feature of Claim 11 of Applicant's application. In fact, Bruce does not teach a "grip" as disclosed and claimed in Claim 11 of Applicant's application.

In addition, Heap teaches a smaller than standard diameter shaft so that the offset grips are able to maintain a standard diameter. Heap teaches, "...a range of shaft diameters from about 0.6 inches to about 0.8 inches represent the preferred embodiment...." (Col. 5, Lns. 31 – 32) In order for the ergonomic grip elements 12 and 14 to retain a proper angular orientation to a kayaker's hands it must be offset from the

shaft centerline by a certain angular degree. Thus, Heap teaches a small diameter straight elongate shaft 16 to accommodate the degree of offset required to allow for the ergonomic improvement. Therefore, combining Heap and Bruce does not teach or suggest all the claim limitations of independent Claim 11 and dependent Claims 13 and 14.

Thus, it is believed that independent Claim 11 is allowable over Heap in view of Bruce, and that Claims 13 – 14 are also allowable because they include all the limitations of their respective allowable independent Claim 11. Therefore it is believed that Claims 13 – 14 are allowable under 35 U.S.C. § 103(a). If the Examiner maintains this rejection, it is respectfully requested that the relevant portion of the disclosures be pointed out.

Claim 15 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Heap in view of Gunnell. This rejection is respectfully traversed. With respect to this rejection, the Examiner notes:

Heap fails to disclose a molded composite material.

Gunnell teaches composite construction.

It would have been obvious to one of ordinary skill in the art at the time of the invention to construct the oar of Heap from composite as taught by Gunnell.

Such a combination would have been desirable at the time the invention was made so as to provide a light yet strong shaft.

Re "molded", such is method of making, carrying no weight in these apparatus claims.

The Applicant respectfully disagrees with Examiner's obviousness rejection. Specifically, Claim 15 is dependent upon Claim 11 and includes all the limitations of Claim 11. As argued above, Heap does not teach each and every element of independent Claim 11. Furthermore, Gunnell teaches a kayak paddle with a shaft that is made from a composite material, or other suitable similar material. (Col. 3, Lns. 5 – 7). Further, a careful review of Gunnell does not reveal any teachings regarding the interlocking feature of Claim 11 of Applicant's application. In fact, Gunnell teaches grips that have finger indentation(s) 24 to aid the kayaker in maintaining a secure grasp of the paddle. (Col. 6, Lns. 1 – 3; FIG. 6) Gunnell teaches a grip that requires a kayaker to grasp the grip in a certain way each time due to the finger indentation(s) 24. In addition,

Gunnell teaches grips, in addition to paddles, that adjust rotatably relative to the shaft of the paddle to provide an orientation desirable to the kayaker. To adjust the grasp angle of the grip, mechanisms, such as set screws, are employed to secure the grips to the shaft. This adjustment must be performed prior to use of the paddle by the kayaker. Gunnell teaches a grip arrangement comprising finger indentation(s) 24 that presents a single standard grasping arrangement to a kayaker that can not be changed during use of the kayak paddle. So if kayaker wishes to change the orientation of the grip relative to the shaft, the adjustment must be made prior to use by the kayaker. The grips taught by Gunnell and Heap restrict the longitudinal movement along the shaft by a kayaker during use of the paddle.

However, Gunnell and Heap do not teach a grip having a constant radius grasping surface that is not encumbered by indentations that provides a kayaker with flexible ergonomic gripping positions during use of the kayak paddle. The present application discloses and claims a grip that allows a kayaker to relocate or adjust the position of their grasp on the grip either longitudinally or concentrically during use of the paddle without having to mechanically adjust the grip itself relative to the shaft of the paddle. This novel design allows a kayaker to change the position of their hands without moving away from the gripping surface or without moving away from a "notch" or indentation of the grip taught by Gunnell and Heap. Additionally, the added width and constant cross-sectional diameter of the grip disclosed and claimed in the present application, allows a kayaker to move their hands inward or outward to aid in comfort and proper grip positioning relative to the kayaker's size. The grip of the present application is a substantial improvement over Gunnell and Heap as it allows a larger range of proper fit for a wider range of users.

Conversely, Applicant's application teaches a grip that is molded and/or bent to be ergonomically configured. (Pg. 4, Lns. 17 – 22; FIGS. 6 – 8) Therefore, combining Heap and Gunnell does not teach or suggest all the claim limitations of Claim 11.

Claims 1 – 6, and 10 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Heap in view of Beckerer, Jr. This rejection is respectfully traversed. With respect to this rejection, the Examiner notes:

Heap fails to disclose a skeleton.

Beckerer discloses a skeleton (ribs 18 and 20), and an outer surface 16. Beckerer fails to disclose a grip as claimed.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide Heap with a skeleton blade structure as taught by Beckerer, Jr.

Such a combination would have been desirable at the time the invention was made so as to provide a light yet strong blade.

Re "wing-shaped", such fails to define any specific structure and/or arrangement so as to define over Beckerer, Jr.

The Applicant respectfully disagrees with the Examiner's obviousness rejection. For similar reasons argued above regarding Claim 11, Heap also does not teach each and every element of Claim 1 of Applicant's application. Specifically, Claim 1 discloses and claims a paddle that includes a shaft 130, wherein the shaft, "includes a surface profile, and the grip includes a complimentary surface profile to engage the surface profile of the shaft to removably interlock the grip to the shaft." (Cl. 1, Lns. 11 – 13) The surface profile 135 locks the grip 140 into position, for example, along the shaft axis in a longitudinal direction and/or latitudinal (e.g., arcuate) direction. (Pg. 5, Lns. 3 – 4) Further, the internal surface 145 of the grip 140 (see, for example, FIG. 9) may be configured to lock into position at the corresponding location on the shaft. Moreover, the shaft may also include one of (i) a groove, (e.g., slot) and (ii) a projection (e.g., lug), and the grip may include the other one of (i) the groove and (ii) the projection to engage the one of (i) the groove and (ii) the projection of the shaft to secure the grip to the shaft. (Pg. 5, Lns. 13 – 23) This interlocking feature provides a mechanical lock in both the concentric (latitudinal) and longitudinal direction. As argued above, Heap does not expressly or inherently disclose, teach, or hint at each and every element of the claimed invention of amended independent Claim 1, arranged as in the claim.

Beckerer teaches a paddle construction having an "exoskeleton" or skeleton that is on the outside of the blade. Beckerer teaches a blade 14 having a pair of opposite, longitudinally extending edges, with flanges 18 and 20 extending along the edges with a central portion 16 located between the flanges 18 and 20. Beckerer teaches exposed flanges 18 and 20 that protrude beyond the central portion 16 which, "...reduces the amount of material which can freely by-pass the edges of the paddle when it is being drawn back in a pull stroke. A scoop effect is thus realizeable, resulting in a surprising

increase in efficiency.” (Col. 3, Lns. 5 – 9) Beckerer teaches that the flanges 18 and 20 form the outside edges of the blade 14, thus they impart little rigidity and structure to the central portion 16 of the blade 14 located inward of the flanges 18 and 20.

Further, Beckerer teaches a blade construction wherein the flanges 18 and 20 and the blade 14 are formed together as a single solid unit constructed of one component during a molding process. (Col. 2, Lns. 51 – 55)

Conversely, Applicant’s application teaches and claims a multi-component blade construction comprising a skeleton 110 and an outer surface 120 that is formed over and encapsulates the skeleton 110. The skeleton 110 provides support for the outer surface 120 at the tip of the blade 100 and also in three distinct directions, including the central portion of the blade 100, which is not taught by the Beckerer reference. (Pg. 4, Lns. 1 – 7) In addition, the outer surface 120 is molded over and encloses the skeleton 110, thus completely incorporating the rigidity of the skeleton 110 to the overall blade structure while concurrently presenting a smooth outer surface interface to the environment within which it operates. (Pg. 4, Lns. 8 – 16) The combination of two components, utilizing a skeleton 110 structure, is novel and presents a vastly different skeleton than the flanges 18 and 20 taught in Beckerer, which desires to provide a scoop paddle design to the environment in which it operates. (Col. 3, Lns. 8 – 10)

Applicant has amended Claim 1 to include the limitation that, “...wherein the blade includes (1) a skeleton to reinforce the blade both longitudinally and laterally and (2) an outer surface integrally formed over and enclosing said skeleton,” to clarify that the outer surface 120 is formed over and encloses the skeleton 110. (Pg. 4, Lns. 8 – 13) Heap and Beckerer do not teach or hint at the features of a blade that includes an inner skeleton for reinforcing the blade both longitudinally and laterally and an outer surface that is integrally formed over and encloses the skeleton of the blade, as is found in amended Claim 1. A rigorous reading of Heap and Beckerer reveals that they contain absolutely no teachings whatsoever regarding this unique blade design.

Therefore, the Examiner has failed to establish a *prima facie* conclusion of obviousness, because he has failed to show that Heap and Beckerer, cited above, teach or suggest all the claim limitations noted above. Thus, it is believed that amended independent Claim 1 is patentable over Heap and Beckerer, and that claims 2 – 6, and



10 are also allowable because they include all the limitations of allowable amended independent Claim 1. Therefore, it is believed that Claims 1 – 6, and 10 are allowable under 35 U.S.C. § 103(a). If the Examiner maintains this rejection, it is respectfully requested that the relevant portion of the disclosures be pointed out.

Claims 7 and 8 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Heap in view of Beckerer, Jr. as applied to claim 1 above, and further in view of Bruce. This rejection is respectfully traversed. With respect to this rejection, the Examiner notes, "Bruce is applied as above."

The Applicant respectfully disagrees with the Examiner's obviousness rejection. As argued above regarding Claim 1, Heap and Beckerer failed to show that Heap and Beckerer teach or suggest all the claim limitations noted above of Claim 1 of Applicant's application. In addition, Bruce is a design patent that teaches a bent shaft but little else. In particular, a careful review of Figures 1 – 5 of Bruce provides no teachings at all regarding the interlocking feature of Claim 1 of Applicant's application. In fact, Bruce does not teach a "grip" or a blade that includes (1) a skeleton to reinforce the blade both longitudinally and laterally and (2) an outer surface integrally formed over and enclosing said skeleton, to clarify that the outer surface 120 is formed over and encloses the skeleton 110. (Pg. 4, Lns. 8 – 13)

In addition, Bruce teaches that the offset portion of the shaft incorporates two bends to the shaft at positions internal and external of the gripping section. This places the center axis of the blade behind the users hand during use. By this arrangement, an amount of torque induced twisting is created due to the fact that the axis of the blade does not meet the center line of the gripping section of the grip. Conversely, the present application discloses and claims in Claim 7 an ergonomic shaft and grip design that aligns the center axis of the blade with the center section of the gripping section. This is accomplished in Claim 7 by having a shaft that incorporates three bends to allow for the center line of the blade to line up directly with the center point of the gripping section. These three bends are disclosed and found in Claim 7, particularly, "...wherein the shaft is bent such that (1) a centerline of a first portion of the shaft is offset from a centerline of a second portion of the shaft by at least one of (i) more than 10 degrees and (ii) less than 17 degrees, and (2) a centerline of a third portion of the shaft bisect

*the center portion of the first portion of the shaft."* These three bends provide that the center line of the blade lines up directly with the center point of the grip, thus decreasing the the amount of torque induced twisting common in the design taught by Bruce.

Therefore, the Examiner has failed to establish a *prima facie* conclusion of obviousness, because he has failed to show that Heap, Beckerer, and Bruce, cited above, teach or suggest all the claim limitations noted above. Thus, it is believed that amended independent Claim 1 is patentable over Heap, Beckerer, and Bruce, and that claims 7 – 8 are also allowable because they include all the limitations of allowable amended independent Claim 1. Therefore, it is believed that Claims 7 – 8 are allowable under 35 U.S.C. § 103(a). If the Examiner maintains this rejection, it is respectfully requested that the relevant portion of the disclosures be pointed out.

Claim 9 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Heap in view of Beckerer, Jr. as applied to claim 1 above, and further in view of Gunnell. This rejection is respectfully traversed. With respect to this rejection, the Examiner does not provide any supportive arguments for his rejection.

In light of the lack of any supportive argument from the Examiner, the Applicant respectfully disagrees with the Examiner's obviousness rejection to the extent it can be determined from a review of the references. As argued above regarding Claim 1, Heap and Beckerer failed to show that Heap and Beckerer teach or suggest all the claim limitations noted above of Claim 1 of Applicant's application. In addition, as argued above, Gunnell teaches a kayak paddle with a shaft that is made from a composite material, or other similar material suitable. (Col. 3, Lns. 5 – 7)

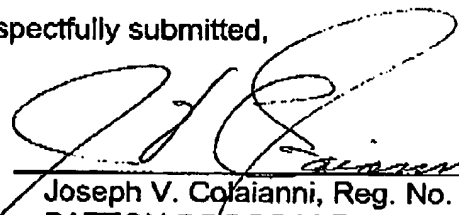
Therefore, the Examiner has failed to establish a *prima facie* conclusion of obviousness, because he has failed to show that Heap, Beckerer, and Gunnell, cited above, teach or suggest all the claim limitations noted above. Thus, it is believed that amended independent Claim 1 is patentable over Heap, Beckerer, and Gunnell, and that Claim 9 is also allowable because it includes all the limitations of allowable amended independent Claim 1. Therefore, it is believed that Claim 9 is allowable under 35 U.S.C. § 103(a). If the Examiner maintains this rejection, it is respectfully requested that the relevant portion of the disclosures be pointed out.

For the reasons explained above, it is believed that pending claims 1 ~ 17 are allowable and their consideration and allowance are respectfully requested. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

The undersigned attorney requests Examiner Swinehart to telephone the undersigned if a conversation could expedite prosecution. Applicant authorizes the Commissioner to charge any additionally required payment of fees to Deposit Account No. 50-1848.

Respectfully submitted,

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